

## Contributors to this Issue

W. R. BENNETT, B.S., Oregon State College, 1925; A.M., Columbia University, 1928. Bell Telephone Laboratories, 1925-. Mr. Bennett has been active in the design and testing of multichannel communication systems, particularly with regard to modulation processes and the effects of nonlinear distortion. As a member of the Transmission Research Department, he is now engaged in the study of pulse modulation techniques for sending telephone channels by microwave radio relay.

H. T. BUDENBOM, B.S.E.E., 1922 and E.E., 1928, Purdue University; part time postgraduate work at Columbia and New York Universities. Western Electric Company, Engineering Department, and Bell Telephone Laboratories since 1922. Wire transmission problems, radio interference studies, point-to-point communication facilities and aviation radio development until 1933. Since 1933 Mr. Budenbom's development work has been primarily on classified projects, which have included radio direction finder and various types of radars. His present activities remain primarily in the field of classified military electronics.

CHARLES CLOS, C.E., New York University, 1927. New York Telephone Company, plant extension engineering, valuation and depreciation matters, intercompany settlements and tandem and toll fundamental plans, 1927-47. Pratt Institute, Evening School, Mathematics Instructor, 1946-48. Bell Telephone Laboratories, studies on development planning for local and toll switching systems, 1947-.

WARREN A. MARRISON, B.Sc. in Physics, Queen's University, Kingston, Canada, 1920; M.A. in Mathematics and Physics, Harvard University, 1921. Engineering Department, Western Electric Company, 1921-25; Bell Telephone Laboratories, 1925-. Mr. Marrison's work has consisted largely of the development and applications of precise standards of frequency.

S. A. SCHELKUNOFF, B.A., M.A. in Mathematics, The State College of Washington, 1923; Ph.D. in Mathematics, Columbia University, 1928. Engineering Department, Western Electric Company, 1923-25; Bell Telephone Laboratories, 1925-26. Department of Mathematics, State College of

Washington, 1926-29. Bell Telephone Laboratories, 1929-. Dr. Schelkunoff has been engaged in mathematical research, especially in the field of electromagnetic theory.

CLAUDE E. SHANNON, B.S. in Electrical Engineering, University of Michigan, 1936; S.M. in Electrical Engineering and Ph.D. in Mathematics, M.I.T., 1940. National Research Fellow, 1940. Bell Telephone Laboratories, 1941-. Dr. Shannon has been engaged in mathematical research principally in the use of Boolean Algebra in switching, the theory of communication, and cryptography.